26.004

Laboratory investigation for clonality of a foodborne outbreak due to *Vibrio parahaemolyticus* in Singapore, 2009

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Background: We report a laboratory investigation of a gastroenteritis outbreak caused by *Vibrio parahaemolyticus* following the consumption of the local salad dish ''Indian rojak'' from a popular hawker stall in Singapore in April 2009. The total number of involved cases was 154, with 48 cases hospitalized and 2 dead. The National Public Health Laboratory collaborated with the investigation of collected isolates of *V. parahaemolyticus* to determine genetic relatedness of these isolates.

Methods: Repetitive extragenic palindromic PCR (REP-PCR), PCR for the thermostable direct hemolysin gene (*tdh*) and the tdh-related hemolysin gene (*trh)* as well as serotyping were performed on all isolates from suspected outbreak cases and some unrelated control strains. The REP-PCR fingerprint was generated with the Agilent® Bioanalyzer using DNA 1000 LabChip® kit, and then analyzed with Bionumerics software.

Results: REP-PCR profiles obtained from 15 of 16 investigated isolates were identical. REPPCR typing appeared to be as discriminatory as pulse-field gel electrophoresis in this outbreak investigation. All above outbreak isolates were positive for *tdh*, negative for *trh* and had serotype O4:K55.*Conclusion:* REP-PCR in this setting was a rapid and useful molecular typing method for the laboratory evaluation of genetic and epidemiological relationships among *V. parahaemolyticus* strains.

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26.005

Detection waterborne diseases associated viruses in the river water Metro Manila and Bulacan, the Philippines

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Background: Untreated groundwater is responsible for about half of the waterborne disease. Inadequate water distribution system in that may not be able to provide clean water, and use river water for the living are two main cause of water borne disease in developing countries. In addition, viruses causing diarrhea are stable in environmental water and serve as threat to humans In the Philippines, about 10,000 children died of severe diarrhea annually and data for viruses in the environment is not enough. So, detection of those viruses from river water is important as it indicates what viruses are circulating among human living in the area. We conducted environmental sampling in Metro Manila, the capital of the Philippines, and Bulacan, the area with a fifth of population of Metro Manila, to detect enteric viruses.

Methods: From March, April and August 2009 water samples were collected from 14 sites of river running in Metro Manila and Bulacan region. Water was concentrated by Poly ethylene glycol precipitation method. We performed real time PCR and conventional PCR to detect virus that can cause water borne disease. All positive samples by conventional PCR underwent sequence analysis and phylogenic tree were constructed.

Results: By both real time PCR and conventional PCR, almost all water samples were positive for viruses, including enteroviruses(100%), adenovirus(64.3%), rotavirus(85.7%), hepatitis A virus (HAV) (100%), astrovirus(42.9%) and noroviruses(87.5%) in these areas. Detected rotavirus belonging to G serotype 1 and this is identical to the virus detected in China Detected hepatitis A virus is belonging to genotype IA. The viral titers of samples in April, enterovirus, hepatitis A virus, norovirus G1, and rotavirus were higher than that of August.

Conclusion: The result of our study substantially showed that seasonality of the rotavirus in the environment agreed with that of human rotavirus infection in the Philippines. In addition, our study suggested that other enteric viruses would spread in dry season in the Philippines. We believe focusing on the aspect may improve water quality as well as prevention of enteric viral diseases in the Philippines.

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26.006

Detection of human enteric viruses in shellfish, vegetables, waters and environmental samples: a preliminary study

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Background: Human enteric viruses contaminations of foods destined for human use, as shellfish, vegetables and waters, are considered a Public Health problem. Many epidemiological studies show that *Adenoviruses, HAV (Hepatitis A Virus)* and *Norovirus* gastrointestinal infections are increasing in industrialized countries. These viruses are largely excreted in feces and show a high resistance in the environment. Environment pollution can occur in many manners. However one of the major source is represented by the personal hygiene of food-handlers and consumers. Moreover, filter-feeder organisms such as mussels are bio-accumulators of viruses in waters. Thus, undercooked shellfish consumption involves sanitary risk. Irrigation and fertilization of fields with sewage may externally contaminate vegetables and fruits. In order to warrant an high level of food safety, European Commission, introduced the concept of ''HACCP'' (Hazard Analysis and Critical Control Points). This rule (EC 178/2002) provides for bacteria quantitative limits and ana-